Eighty-Ninth Meeting

OF

The Electrochemical Society, Inc.

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BIRMINGHAM, ALABAMA

April 11, 12, 13, 1946

LOCAL COMMITTEE

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University of Alabama

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E. V. JONES
Birmingham Southern College

A. W. LAZIER
Southern Research Institute

Eighty-Ninth Meeting

Hotel Information

Convention Headquarters and Registration Desk will be at the **Hotel Tutwiler, 20th Street, Birmingham, Alabama.** Members are urged to make their room reservations at once. The rates at the Hotel Tutwiler are from $2.75 to $5.00 per day for single rooms with bath; and from $4.00 to $8.00 per day for double rooms with bath. Suites are from $10.00 for one and $15.00 for two.

Rates at other neighboring hotels are listed on the last page of this booklet.

Please send all requests for Room Reservations to J. R. Lester, Alabama Power Co., 600 North 18th Street, Birmingham, Alabama.

Registration

Registration of members and guests will start at 8:00 a. m. on Thursday, April 11th. The Registration Desk will be open daily from 8:00 a. m. to

2:00 p. m. throughout the Convention.

The **Registration Desk** will be located in the **Main Lobby** of the **Hotel Tutwiler.** The registrar will receive arriving members and guests, distribute badges and programs and give detailed information.

Guests should be introduced by members and when registered may attend the sessions and receive such other courtesies as may be extended to them by the Local Committee or by the Officers of the Society. Local members of other scientific societies are invited to register as guests without introduction.

The registration fee is $3.00 per member or guest registering on Thursday or Friday. On Saturday, the fee is $2.00. The registration fee for Ladies and Students is $1.00 at all times. Everyone attending the convention must register.

Admission to Sessions and Social Functions

The Society Badge, received upon registration, is absolutely essential for

admission to any of the functions, including the technical and scientific sessions, luncheons and dinners.

Places of Meetings

All **Scientific and Technical Sessions** will be held in the Terrace Room of the Hotel Tutwiler on Thursday, April 11th, Friday, April 12th and Saturday, April 13th.

All luncheons will be served on the Terrace.

Thursday Evening's Dinner and **Friday Evening's Supper** will be served on the Terrace.

Saturday's Round Table Discussion will be on the South Terrace.

MANUFACTURERS' EXHIBITS AND RARE METALS DISPLAY

The Manufacturers' Exhibits and the Rare Metals will be displayed in the meeting room. Members and guests are invited to view the exhibits and discuss their equipment and process problems with the manufacturers' representatives in attendance.

LUNCHEONS AND DINNERS

Thursday Luncheon

The guest speakers at the Thursday Luncheon will be **Thomas W. Martin,** President of the Alabama Power Company, who will talk on "The Southern Research Institute." The Luncheon will be held in the Terrace Dining Room, Hotel Tutwiler, $2.00 per cover.

Thursday Dinner

The Thursday Dinner will be held in the Terrace Dining Room, Hotel Tutwiler. Presidential address by **William R. Veazy**—"What Did the Presidents Think". Award of Young Author's Cash and Turner Prizes.

Friday Luncheon

The Luncheon period on Friday will be given over to group luncheons for the various Divisions. This will be an excellent opportunity for those interested in a particular Division to meet other members of the Division. Division Officers are cooperating in arranging this Luncheon.

Friday Supper

The Friday Supper will be held in the Terrace Dining Room. Immediately

following the Supper will be the **Annual Business Meeting** of the Society to which all members are cordially invited. Reports of the Board of Directors, Secretary and Treasurer. Report of the Tellers of Election. Bestowal of Honorary Membership on Dr. Colin G. Fink. Short address by Professor S. C. Lind of Minnesota.

Saturday Luncheon (1:00 p.m.)

The Saturday Luncheon will be held in the Terrace Dining Room. It will be in charge of the Industrial Electrolytic Division, **Ralph B. Hammond** presiding. The luncheon speaker will be **Warren Whitney** of National Cast Iron Pipe Company.

Immediately following the Luncheon will be the

Round Table Discussion

European Cells

6:30 p.m.—Adjournment.

Preprints

There will be no free distribution of preprints at the Convention. Extra copies of preprints published may be had at the Registration Desk, Hotel Tutwiler, at 25 cents each, if available.

STEWART J. LLOYD
JOSEPH W. RICHARDS MEMORIAL LECTURER

Friday, April 12th, 1946

4:45 p.m.—South Terrace
Hotel Tutwiler

The Joseph W. Richards Memorial Lectureship was established in 1930 in honor of Dr. Richards by a group of his friends and admirers. Dr. Richards was one of the founders of the Electrochemical Society, its first President and its Secretary from 1904 to 1921. The distinguished scientists who have lectured are John A. Mathews, R. S. Hutton, W. S. Landis, Karl K. Darrow, C. H. Herty, Bradley Stoughton, Vladimir K. Zworykin and B. D. Saklatwalla. The ninth Joseph W. Richards Lecturer is Dr. Stewart J. Lloyd.

Professor Lloyd was born in Hamilton, Ontario on September 12th, 1881. He attended Toronto University and received his B. Sc. degree in 1904. After spending two post graduate years as assistant in chemistry at McGill University, he moved to Chicago and received from its University the Doctor of Philosophy degree in 1910. He was appointed Adjunct Professor of Chemistry at the University of Alabama in 1909 and rapidly rose to the deanship of the School of Chemistry, Metallurgy and Ceramics. He has been on the State Geology Board since 1927. He is Consulting Chemical Engineer for the Alabama Power Company. In recognition of his outstanding accomplishments in the teaching profession and in the science and application of chemistry, the University of Alabama bestowed upon Dr. Lloyd the degree of Doctor of Science honoris causa in 1938.

Acknowledgment

The Board of Directors of the Electrochemical Society gratefully acknowledges the kind cooperation and assistance of the friends of the Society in the Birmingham District who have been largely responsible for the interesting and enjoyable program.

COST OF FUNCTIONS

Men

Registration (1.00 for ladies and students)	$3.00
Thursday Luncheon, Speaker—Thomas W. Martin, President of the Alabama Power Company	2.00
Thursday Dinner, Presidential Address by William R. Veazey	3.25
Friday Luncheon, Guest Speaker Raymond R. Paty, President of University of Alabama	2.00
Friday Supper	2.50
Saturday Luncheon, Speaker, Warren Whitney, National Cast Iron Pipe Company	2.00
Total	$14.75

(Note: All charges include tips.)

Ladies

The cost of functions for the ladies attending the Convention will be the same for each event as for the men. The registration fee, however, is $1.00, making the total cost $12.75. There will be no formal Ladies' Program, but informal entertainment has been arranged.

Note to Authors of Papers

In the presentation of your paper, please do not read the paper but state briefly: (1) the purpose of your investigation; (2) the method pursued; (3) the important results obtained; and (4) your conclusions based on your findings. A blackboard and a projection lantern will be provided. Slides (4" by 3¼") are always welcomed by the audience. Curves are more convincing than tabulations. Samples of new products should be relatively small so as to facilitate passing them among the audience.

Typewritten Discussion

Members wishing to present written discussions on any of the papers listed in this program will please submit three copies of each to Dr. Colin G. Fink, Secretary of the Society, whose office is at Columbia University, New York City, 27.

DETAILED PROGRAM

Thursday, April 11th 1946

8:00 a.m. Registration begins. Fee $3. (Ladies and Students, $1.00) Main Lobby, Hotel Tutwiler

8:45 a.m. Formal Opening of the 89th Meeting of the Society, South Terrace, Hotel Tutwiler

Local Chairman Stewart J. Lloyd
President William R. Veazey

9:00 a.m. First Session on Corrosion—H. H. Uhlig presiding

(89-28) Loren W. Smith, Head of Metallurgical Section, Materials Dept., Cornell Aeronautical Laboratory, Buffalo, N. Y.

"Corrosion Tests of Multi-Arc Welded High-Strength Aluminum Alloys"

(89-17) Morris Cohen, National Research Council, Ottawa, Canada
"Sodium Hexa Meta Phosphate as a Corrosion Inhibitor for Ottawa Tap Water"

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(89-25) Chester W. Smith, Detrex Corporation, Detroit, Michigan

The 2 Cohen papers were interchanged. CRFWS.

Thursday

"Acidic Atmosphere Evaluation of effect of Cleaning Upon Corrosion of Steel"

(89-23) E. H. Wyche, Lorraine R. Voigt and F. L. La Que, The International Nickel Co., Inc., Corrosion Engineering Section, New York, N. Y.

"Crevice Corrosion"

(89-27) E. M. Mahla and N. A. Nielsen, E. I. Du Pont De Nemours & Company, Wilmington 98, Delaware.

"Passivation of Stainless Steels"

(89-15) Norman Hackerman and Donald I. Marshall, University of Texas, Austin 12, Texas.

"Corrosion Studies on Electrolytic Chromium"

12:00 noon. Luncheon in Terrace Dining Room, Hotel Tutwiler, $2.00 per cover. Address by **Thomas W. Martin,** President of Alabama Power Company

"The Southern Research Institute"

add paper by Robinson, Midland Mich

Thursday

1:30 p.m. Second Session on Corrosion —H. H. Uhlig presiding (South Terrace)

(87-11) A. Wachter and N. Stillman, Shell Development Company, 4560 Horton Street, Emeryville 8, California

not presented

"Corrosion by Phenol at High Temperatures"

(87-12) C. P. Larrabee, Corrosion Research Laboratory, Carnegie-Illinois Steel Corp., Vandergrift, Pa.

"Corrosion of Steels in Marine Atmospheres and in Sea Water"

(87-15) F. L. LaQue and Wm. F. Clapp, International Nickel Co., Inc., New York, N. Y.

"Relationships Between Corrosion and Fouling of Cu-Ni Alloys in Sea Water"

(87-26) C. L. Bulow, Bridgeport Brass Company, Bridgeport, Conn.

"Corrosion and Biofouling of Copper Base Alloys in Sea Water"

Thursday

(87-13) H. H. Uhlig, General Electric Company, Research Laboratory, Schenectady, N. Y.

"The Comparative Effect of Carbon and Nitrogen on Intergranular Corrosion of 18-8 Stainless Steel"

(87-19) Morris Cohen, National Research Council, Ottawa, Ontario, Canada

"An Apparatus for Measuring Corrosion"

th to p 10

(87-32) James T. Waber and Hugh J. McDonald and B. Longtin, Illinois Institute of Technology, 3300 Federal Street, Division of Chemistry, Chicago 16, Ill.

"Stress Corrosion Cracking of Mild Steel"

(87-20) Charles F. Bonilla, Dept. of Chemical Engineering, Johns Hopkins University, School of Engineering, Baltimore, Md.

"Pipe Service Tests on Baltimore Water"

not presented

Thursday

7:30 p.m. Dinner in Terrace Dining Room, $3.25 per cover. Presidential Address—"What did the Presidents Think?" by Wm. R. Veazey

Award of Young Author's Prize
Award of Turner Book Prize

Friday, April 12th, 1946

7:30 a.m. Group Breakfasts

8:00 a.m. Registration Continued, Main Lobby, Hotel Tutwiler

9:00 a.m. Scientific Technical Session: "The Rare Metals"—Professor B. S. Hopkins, University of Illinois presiding

(89-9) C. C. Loomis, New England Lime Company, Canaan, Conn.

"Calcium Metal by Thermal Reduction"

(3011) J. W. Marden and D. M. Wroughton, Westinghouse Electric Corp., Bloomfield, N. J.

"The Effect of Working on the Physical Properties of Molybdenum"

Friday

(89-11) Henry C. Kawecki, Beryllium Corporation, Reading, Pa.

"The Production of Beryllium Compounds, Metal and Alloys"

(89-19) Jack M. Tien, Beacon Research Laboratory, The Texas Co., Beacon, N. Y.

"Preparation of Beryllium Powder"

(89-5) Bengt. R. F. Kjellgren, Brush Beryllium Co., Cleveland, Ohio

"The Production of Beryllium Oxide and Beryllium Copper"

(3006) W. J. Kroll, A. W. Schlechten and L. A. Yerkes, Bureau of Mines, Albany, Oregon

"Ductile Zirconium from Zircon Sand"

(89-18) Robert I. Jaffee, E. W. McMullen, Bruce W. Gonser, Battelle Memorial Institute, Columbus, Ohio

"Technology of Germanium"

(89-14) S. C. Lind, Dean, University of Minnesota, Institute of Technology, Minneapolis, Minnesota

Friday

"Uranium and Radium in the Postwar Period"

(89-8) B. S. Hopkins, University of Illinois, Urbana, Ill.

"Electrochemistry of the Rare Earth Group"

(89-10) Arthur S. King, Mount Wilson Observatory, Pasadena, California

"Scandium in the Stars"

12:00 noon. Luncheon in Terrace Dining Room, Hotel Tutwiler, in charge of Divisions of the Society, $2.00 per cover.

1:30 p.m. Scientific Technical Session in charge of Electrothermic Division—**James T. MacKenzie** presiding

(89-12) Tonnes Ellefsen, c/o G. Hagerup-Larssen, Det Norske Aktieselskab for Elektrokemisk Industri, Inc., 101 Park Ave., New York 17, N. Y.

"The 'ELKEM' Rotating Furnace for Electrothermic Processes"

Friday

(89-2) W. J. Kroll, A. W. Schlechten and L. A. Yerkes, U. S. Bureau of Mines, Albany, Oregon

"A New Carbon Resistor Furnace"

(89-3) Eugene Wainer, Titanium Alloy Mfg. Co., Niagara Falls, N. Y.

"Hith Titania Dielectrics"

(89-13) John A. Yanko, A. E. Drake and Frank Hovorka, Western Reserve University, Cleveland 6, Ohio

"Thermodynamic Studies of Dilute Solutions in Molten Binary Alloys"

(89-4) Burke Cartwright and S. F. Ravitz, Bureau of Mines, Washington 25, D. C.

"Electrolysis of Manganese into a Metal Cathode from Suspensions of Manganese Oxide and Carbon in Molten Manganous Chloride"

4:45 p.m. "Joseph W. Richards Memorial Address"—Professor Stewart J. Lloyd, South Terrace, Hotel Tutwiler

Friday

7:00 p.m. Supper, South Terrace, Hotel Tutwiler, $2.50 per cover

Immediately following the supper, **Annual Meeting** of the Society, Reports of the Board of Directors, Treasurer, Secretary; Report of Tellers of Election. Bestowal of Honorary Membership on Dr. Colin G. Fink. Short address by Professor S. C. Lind of Minnesota.

Saturday, April 13th, 1946

7:30 a.m. Group Breakfasts

8:00 a.m. Registration continued, Main Lobby, Hotel Tutwiler

9:00 a.m. Scientific Technical Session —**John F. Gall** presiding

(89-1) C. B. F. Young and Clifford Struyk, Flushing, Long Island "Deposition of Nickel Cobalt Alloys from Chloride Solutions"

(89-7) A. H. Du Rose, Harshaw Chemical Company, Cleveland, Ohio "Lead and Lead-Tin Deposits"

Saturday

(89-24) C. J. Zitek and Hugh J. McDonald, Illinois Institute of Technology, Chicago 16, Illinois.

"The Transference Number of Nickel in Nickel Sulfate Solution"

(89-20) R. R. Lloyd, W. T. Rawles, R. G. Feeney, Bureau of Mines, Boulder City, Nevada

"The Electrowinning of Chromium from Trivalent Salt Solutions"

(89-16) L. P. Wenzell, P. J. Suber and S. Cottrell, Monsato Chemical Company, Monsato, Illinois.

"Economic Factors in Operation of Cylindrical Chlorine Cells"

(89-26) J. Koster, Crimora Research and Development Corporation, Washington 6, D. C.

"The Control of Sulfur in Electrolytic Manganese"

(89-6) J. E. Stareck, United Chromium, Inc., Detroit 7, Michigan

"A New Type of Electrochemical Reaction"

Saturday

(89-21) A. L. Ferguson and G. H. Kissin, University of Michigan, Ann Arbor, Michigan

"Electron Emission and the Photovoltaic Effect"

(89-22) L. C. Copeland and F. S. Griffith, c/o E. H. Bunce, New Jersey Zinc Company, Palmerton, Pa.

"The Reaction of the Leclanché Dry Cell"

1:00 p.m. Luncheon, Terrace Dining Room, $2.00 per cover. Luncheon Speaker, **Warren Whitney** of National Cast Iron Pipe Company.

2:30 p.m. Round Table Discussion "European Cells", **Ralph B. Hammond presiding**

6:30 p.m. Adjournment

Sustaining Members of the Electrochemical Society as of February, 1946

1. Ajax Metal Co., Philadelphia, Pa.
2. Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
3. Alloy Steel Products Co., Inc., Linden, N. J.
4. Aluminum Co. of America, New Kensington, Pa.
5. American Platinum Works, Newark, N. J.
6. American Zinc, Lead & Smelting Co., St. Louis, Mo.
7. Atlas Powder Co., Wilmington, Del.
8. Bell Telephone Laboratories, New York City
9. Bethlehem Steel Company, Inc., Bethlehem, Pa.
10. Buffalo Electro-Chemical Co., Buffalo, N. Y.
11. Burgess Battery Company, Freeport, Ill.
12. Canadian Industries Ltd., Montreal, Canada.
13. Carborundum Co., Niagara Falls, N.Y.
14. Cardox Corp., Chicago, Ill.
15. "Chemical & Metallurgical Engineering," New York City.
16. Chrysler Corporation, Detroit, Mich.
17. Consolidated Mining and Smelting Company of Canada Ltd., Trail, B. C.
18. Copperweld Steel Co., Glassport, Pa.

19. Crane Company, Chicago, Ill.

20. Diamond Alkali Co., Pittsburgh, Pa.

21. Doall Company, Des Plaines, Ill.

22. Dow Chemical Co., Midland, Mich.

23. E. I. duPont de Nemours & Co., Wilmington, Del.

24. Eastman Kodak Co., Rochester, N. Y.

25. Marion Eppley Laboratories, Newport, R. I.

26. Hanson - Van Winkle - Munning Co., Matawan, N. J.

27. Harshaw Chemical Co., Cleveland, Ohio.

28. Hooker Electrochemical Co., Niagara Falls, N. Y.

29. Houdaille-Hershey Corp., Detroit, Mich.

30. International Graphite & Electrode Corp., St. Marys, Pa.

31. International Minerals & Chemical Corp., Chicago, Ill.

32. International Nickel Co., New York City.

33. Paul J. Kruesi, Southern Ferro Alloys, Chattanooga, Tenn.

34. Mathieson Alkali Works, Niagara Falls, N. Y.

35. Metal and Thermit Co., Carteret, N. J.

36. Monsanto Chemical Co., St. Louis, Mo.

37. National Carbon Co., Inc. (Acheson Graphite), New York City.

38. Niagara Alkali Co., Niagara Falls, N. Y.

39. Norton Co., Worcester, Mass.

40. Oldbury Electro Chemical Co., Niagara Falls, N. Y.

41. Pennsylvania Salt Mfg. Co., Philadelphia, Pa.

42. Shawinigan Chemicals Ltd., Shawinigan Falls, Canada.

43. The G. Frederick Smith Chemical Co., Columbus, Ohio.

44. Solvay Process Company, Syracuse, N. Y.

45. Stackpole Carbon Co., St. Marys, Pa.

46. Udylite Corp., Detroit, Mich.

47. Union Carbide Co., Electrometallurgical Div., New York City.

48. United Chromium, Inc., New York City.

49. Vanadium Corp. of America, New York City.

50. Victor Chemical Works, Mt. Pleasant, Tenn.

51. Western Electric Co., Inc., Chicago, Ill.

52. Western Electrochemical Company, Los Angeles, Cal.

53. Westinghouse Research Laboratories, East Pittsburgh, Pa.

54. Westvaco Chlorine Products, Inc., New York City.

55. Wyandotte Chemicals Corp., Wyandotte, Mich.

SOCIETY MEMBERSHIP

Yearly dues $10.00.

Application blanks and any other information may be obtained from the Secretary. Each member receives the publications of the Society, in pamphlet form, and the monthly Bulletin. Members can obtain the two bound volumes of the Transactions with the "Discussions" and Proceedings for an extra payment of $3.00 per year.

Sustaining membership $100 per year.

LIFE MEMBERSHIP

Have you considered life membership in the Society? Life membership costs $195 in return for which you will receive all the publications including bound volumes of the Society. It does not require elaborate calculations to show how much you save in the end—enough to buy several Victory Bonds. In case you do not wish the volumes but only the preprints and Bulletin, the life membership costs $150.

SOCIETY PIN $3.00

The Society pin, 14 k. solid gold, as illustrated above, actual size, is a circular shield with details in design brought out in gold against a lilac background. It is a very attractive pin.

FALL MEETING

at the

HOTEL ROYAL YORK
Toronto, Canada

October 16, 17, 18 and 19, 1946

FOUR GENERAL SESSIONS

"New Plastic Insulators"

"Rectification and Power Supply for the Electrolytic Industry"

"Wartime Developments in Electrodeposition"

"Mechanism of Electrode Processes"

Manuscripts for the Fall Meeting are due at the Secretary's Office 3000 Broadway, New York City not later than July 15, 1946

NOTES

HOTELS AND ROOM RATES

Hotel	Double Room	Single Room
Bankhead..	$4.00-$5.00	$2.50-$3.00
Molton.....	$4.00-$5.00	$2.50-$4.00
Redmont....	$4.00-$7.50	$3.00-$5.00
Thomas Jefferson ...	$4.00-$8.00	$3.00-$5.00

Please send your hotel reservation request to:

Mr. J. R. Lester
c/o Alabama Power Company
600 North 18th Street
Birmingham, Alabama

LOCAL SECTIONS OF THE SOCIETY

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